AMENDMENTS

Amendments to the Claims

Please amend the claims according to the following listing of the claims.

Listing of the claims

1. (currently amended) A process for carrying out a high-temperature reaction<u>, in a reactor comprising a reaction chamber and a quench area,</u> in which starting materials are supplied to [[a]] <u>the</u> reaction chamber through channels of a burner block, where in the reaction chamber the high-temperature reaction having a short residence time takes place at a temperature of at least 1500°C and the reaction mixture is subsequently rapidly cooled in [[a]] <u>the</u> quench area, characterized in that in the quench area firstly a direct cooling to a temperature in the range from 650°C to 1200°C takes place by supply of an evaporating quench medium and subsequently<u> in the quench area</u> an indirect cooling in a heat exchanger takes place.

2. (previously presented) A process as claimed in claim 1, characterized in that the starting materials are premixed.

3. (previously presented) A process as claimed in claim 1, characterized in that the direct cooling takes place to a temperature in the range from 700°C to 1000°C.

4. (previously presented) A process as claimed in claim 1, characterized in that the direct cooling takes place in one or more stages.

5. (previously presented) A process as claimed in claim 1, characterized in that the quench medium is water or a hydrocarbon or a hydrocarbon mixture.

6. (previously presented) A process as claimed in claims 1, characterized in that the indirect cooling takes place to less than 300°C.

7. (previously presented) A process as claimed in claim 1, characterized in that the indirect cooling is utilized for the preheating of the starting materials or for the generation of steam.

8. (currently amended) A reactor for carrying out a process as claimed in claim 1, wherein all the surfaces restricting the reaction chamber are formed using a fire-

resistant ceramic stable at reaction temperature having an alumina content of at least 80% by weight, characterized in that the fire-resistant ceramic is introduced into the reaction chamber in the form of stones or blocks or as a cast or tamped mass and subsequently compressed, dried and calcined, the calcining process ~~preferably~~ taking place owing to the high temperature reaction.

9. (canceled)

10. (previously presented) A reactor as claimed in claim 8, characterized in that the fire-resistant ceramic has a thickness in the range from 7 to 30 cm.

11. (previously presented) A reactor as claimed in claim 8, characterized in that the transition of the reaction chamber to the quench area is designed in the form of a gap which has a width in the range from 2 to 200 mm.

12. (previously presented) A reactor as claimed in claim 11, characterized in that the transition of the reaction chamber to the quench area is designed in the form of an annular gap.

13. (previously presented) A reactor as claimed in claim 11, characterized in that the reaction chamber is designed in the form of an annular gap.

14. (previously presented) A reactor as claimed in claim 11, characterized in that the channels in the burner block are aligned in the direction of the longitudinal axis of the reaction chamber.

15. (currently amended) A reactor as claimed in claim 11, characterized in that some of the channels for the reaction ~~chamber~~ mixture and/or channels for the supply of additional oxygen or of reaction auxiliaries are aligned at any desired angle to the longitudinal axis of the reaction chamber.

16. (previously presented) A reactor as claimed in claim 11, characterized in that the quench area is constructed aligning in the direction of the longitudinal axis of the reaction chamber.

17. (previously presented) A reactor as claimed in claim 8, characterized in that the supply of the quench medium to the direct cooling takes place via quench nozzles which are attached to one or more distributors.

18. (previously presented) A reactor as claimed in claim 17, characterized in that the quench nozzles are arranged radially or tangentially to the main flow direction of

the reaction mixture, where in the case of multistage supplies with tangential arrangement a countercurrent positioning of the quench nozzles is preferred.

19. (previously presented) A process for the scale-up of a reactor as claimed in claim 11, characterized in that for a throughput enlargement the internal diameter of the reactor is enlarged and the gap size at the transition from the reaction chamber to the quench area is kept constant.

20. (previously presented) A process as claimed in claim 1, wherein the high-temperature reaction produces acetylene by partial oxidation of hydrocarbons using oxygen.

21. (previously presented) A reactor as claimed in claim 8, wherein the high-temperature reaction produces acetylene by partial oxidation of hydrocarbons using oxygen.

22. (new) A process as claimed in claim 1, characterized in that the direct cooling takes place to a temperature in the range from greater than 800°C to 1200°C.

23. (new) A process as claimed in claim 1, characterized in that the direct cooling takes place to a temperature in the range from 850°C to 1200°C.

24. (new) A process as claimed in claim 1, the evaporating quench medium evaporates completely.

25. (new) The process as claimed in claim 20, wherein the acetylene yield is about 29% based on carbon.

26. (new) The process as claimed in claim 21, wherein the acetylene yield is about 29% based on carbon.